

What is Claimed is:

1. A communication device for realizing communication with data distributed to a plurality of connections, comprising

5 a function of storing information for restoring data distributed to the plurality of connections within a header of said data.

2. The communication device according to claim 1, wherein said header is a connection header.

3. The communication device according to claim 1, which has a function of examining maximum values of a packet size allowed by a connection related to communication and unifying the smallest size among
5 said packet size maximum values as a maximum value of an allowable packet size.

4. The communication device according to claim 1, which has a function of examining maximum values of a packet size allowed by a connection related to communication and communicating with a packet size
5 equal to or less than the smallest size among said packet size maximum values.

5. The communication device according to any

of claim 1 through claim 4, wherein as information for restoring said data, a data length is stored.

6. A communication device for realizing communication with data distributed to a plurality of connections by using a connection by a transport protocol equivalent to OSI four layers including TCP, Sctp, UDP and DCCP, comprising

a function of storing information for restoring data distributed to the plurality of connections within a header equal to or less than equivalence of four layers including TCP, Sctp, UDP and DCCP.

7. The communication device according to claim 6, wherein information for restoring data distributed to the plurality of connections is stored within the header of the transport protocol.

8. The communication device according to claim 6, wherein information for restoring data distributed to the plurality of connections is stored in an option field within the header of the transport protocol.

9. The communication device according to claim 6, wherein information for restoring data

distributed to the plurality of connections is stored in
a part of a timestamp field of an option field within
5 the header of the transport protocol.

10. The communication device according to
claim 1, wherein information for restoring data
distributed to the plurality of connections is stored
within an IP header.

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11. The communication device according to
claim 1, wherein information for restoring data
distributed to the plurality of connections is stored in
a fragment field within an IP header.

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12. The communication device according to
claim 6, which has a function of examining an MTU usable
by the plurality of connections by a path MTU discovery
option and unifying MTU of the respective connections to
5 the smallest MTU obtained by said examination.

13. The communication device according to
claim 6, wherein a transmission side stores a
distributed data length in said information for
restoring said distributed data and a reception side
5 refers to said data length to restore the data.

14. The communication device according to any

of claim 1 through claim 13, wherein a data size to be transferred to each connection at one time is changed according to a communication rate.

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15. The communication device according to any of claim 1 through claim 14, wherein data is restored by referring to the information for restoring data.

16. The communication device according to any of claim 1 through claim 13, which has a function of, when a TCP communication rate is low, reducing the volume of data to be transferred to each connection at one time and when the TCP communication rate becomes high, increasing the volume of data to be transferred to each connection at one time.

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17. A communication method for realizing communication with data distributed to a plurality of connections, comprising the step of:

processing of storing information for restoring data distributed to the plurality of connections within a header of data.

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18. The communication method according to claim 17, wherein said header is a connection header.

19. The communication method according to

claim 17, comprising processing of examining maximum
values of a packet size allowed by a connection related
to communication and unifying the smallest size among
5 said packet size maximum values as a maximum value of an
allowable packet size.

20. The communication method according to
claim 17, comprising processing of examining maximum
values of a packet size allowed by a connection related
to communication and communicating with a packet size
5 equal to or less than the smallest size among said
packet size maximum values.

21. The communication method according to any
of claim 17 through claim 20, wherein as the information
for restoring data, a data length is stored.

22. A communication method for realizing
communication with data distributed to a plurality of
connections by using a connection by a transport
protocol equivalent to OSI four layers including TCP,
5 Sctp, UDP and DCCP, comprising the step of:

processing of storing information for
restoring data distributed to the plurality of
connections within a header equal to or less than
equivalence of four layers including TCP, Sctp, UDP and
10 DCCP.

23. The communication method according to claim 22, wherein the information for restoring data distributed to the plurality of connections is stored within the header of the transport protocol.

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24. The communication method according to claim 22, wherein the information for restoring data distributed to the plurality of connections is stored in an option field within the header of the transport protocol.

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25. The communication method according to claim 22, wherein the information for restoring data distributed to the plurality of connections is stored in a part of a timestamp field of an option field within the header of the transport protocol.

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26. The communication method according to claim 17, wherein the information for restoring data distributed to the plurality of connections is stored within an IP header.

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27. The communication method according to claim 17, wherein the information for restoring data distributed to the plurality of connections is stored in a fragment field within an IP header.

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28. The communication method according to claim 22, comprising processing of examining an MTU usable by the plurality of connections by a path MTU discovery option and unifying MTU of the respective connections to the smallest MTU obtained by said examination.

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29. The communication method according to claim 22, wherein a transmission side stores a distributed data length in the information for restoring distributed data and a reception side refers to said distributed data to restore the data.

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30. The communication method according to any of claim 17 through claim 29, comprising processing of changing a data size to be transferred to each connection at one time according to a communication rate.

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31. The communication method according to any of claim 17 through claim 30, comprising processing of restoring data by referring to the information for restoring data.

32. The communication method according to any of claim 17 through claim 29, comprising processing of, when a TCP communication rate is low, reducing the

5 volume of data to be transferred to each connection at
one time and when the TCP communication rate becomes
high, increasing the volume of data to be transferred to
each connection at one time.

33. A program which operates on a computer
for executing communication with data distributed to a
plurality of connections, comprising the function of:
executing processing for storing information
5 for restoring data distributed to the plurality of
connections within a header of said data.

34. The program according to claim 33,
wherein said header is a connection header.

35. The program according to claim 33, which
causes execution of the function of examining maximum
values of a packet size allowed by a connection related
to communication and unifying the smallest size among
5 said packet size maximum values as a maximum value of an
allowable packet size.

36. The program according to claim 33, which
causes execution of the function of examining maximum
values of a packet size allowed by a connection related
to communication and communicating with a packet size
5 equal to or less than the smallest size among said

packet size maximum values.

37. The program according to any of claim 33 through claim 36, which causes execution of the function of storing a data length as the information for restoring data.

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38. A program which operates on a computer for executing communication with data distributed to a plurality of connections by using a connection by a transport protocol equivalent to OSI four layers including TCP, SCTP, UDP and DCCP, comprising the function of:

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executing processing for storing information for restoring data distributed to the plurality of connections within a header equal to or less than equivalence of four layers including TCP, SCTP, UDP and DCCP.

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39. The program according to claim 38, which causes execution of the function of storing the information for restoring data distributed to the plurality of connections within the header of the transport protocol.

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40. The program according to claim 38, which causes execution of the function of storing the

information for restoring data distributed to the plurality of connections in an option field within the header of the transport protocol.

41. The program according to claim 38, which causes execution of the function of storing the information for restoring data distributed to the plurality of connections in a part of a timestamp field of an option field within the header of the transport protocol.

42. The program according to claim 33, which causes execution of the function of storing the information for restoring data distributed to the plurality of connections within an IP header.

43. The program according to claim 33, which causes execution of the function of storing the information for restoring data distributed to the plurality of connections in a fragment field within an IP header.

44. The program according to claim 38, which causes execution of the function of examining an MTU usable by the plurality of connections by a path MTU discovery option and unifying MTU of the respective connections to the smallest MTU obtained by said

examination.

45. The program according to claim 38, which causes a transmission side to execute the function of storing a distributed data length in the information for restoring distributed data and a reception side to
5 execute the function of referring to said distributed data length to restore the data.

46. The program according to any of claim 33 through claim 45, which causes execution of the function of changing a data size to be transferred to each connection at one time according to a communication rate.
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47. The program according to any of claim 33 through claim 46, which causes execution of the function of restoring data by referring to the information for restoring data.
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48. The program according to any of claim 33 through claim 45, which causes execution of the function of, when a TCP communication rate is low, reducing the volume of data to be transferred to each connection at one time and when the TCP communication rate becomes
5 high, increasing the volume of data to be transferred to each connection at one time.